What is claimed is:

1. An apparatus for measuring a bio signal, comprising:

a bio signal measurement unit, which is insertable into an ear to be in close contact with an internal surface of the ear, the bio signal measurement unit having a photo plethysmography (PPG) measurement module for radiating light of different wavelengths onto the internal surface of the ear, detecting light transmitted through the ear, and outputting a PPG signal including bio information;

a control unit having a PPG signal processor for generating the bio information using the PPG signal measured by the PPG measurement module; and

an output unit for displaying the bio information generated from the control unit.

2. The apparatus as claimed in claim 1, wherein the PPG measurement module comprises:

a light source unit for radiating light onto the internal surface of the ear; and

a photodetector for detecting light radiated onto the internal surface of the ear and then transmitted through the ear.

3. The apparatus as claimed in claim 2, wherein the light source unit comprises:

a first light source for radiating light of a first wavelength onto the internal surface of the ear; and

a second light source for radiating light of a second wavelength onto the internal surface of the ear,

wherein the first and second wavelengths are different.

4. The apparatus as claimed in claim 1, wherein the PPG signal processor comprises:

a peak detector for detecting peaks of the PPG signal; and

a signal processor for generating the bio information using values of the peaks.

5. The apparatus as claimed in claim 4, wherein the signal processor comprises a pulse detector for calculating a time interval between the peaks to measure a pulse rate.

6. The apparatus as claimed in claim 4, wherein the signal processor comprises a respiration detector for band-pass filtering the PPG signal to measure a respiration frequency.

7. The apparatus as claimed in claim 4, wherein the signal processor comprises:

a reflection coefficient detector for detecting an AC component and a DC component from each of PPG signals detected at different wavelengths and measuring reflection coefficients; and

an oxygen saturation detector for detecting oxygen saturation in blood using a ratio between the reflection coefficients of the different wavelengths.

8. The apparatus as claimed in claim 4, wherein the PPG signal processor further comprises:

an amplifier for amplifying the PPG signal; and

a filter for removing noise components from the PPG signal amplified by the amplifier and then outputting the PPG signal to the peak detector.

9. The apparatus as claimed in claim 1, wherein the bio signal measurement unit further comprises a temperature measurement module for sensing infrared rays radiated from a body and outputting an electrical signal corresponding to the sensed infrared rays, and wherein the control unit further includes a temperature processor for calculating a body temperature using the electrical signal output from the temperature measurement module.

10. The apparatus as claimed in claim 9, wherein the temperature measurement module comprises:

a waveguide installed near an eardrum for guiding infrared rays radiated from the eardrum; and

a light receiver for sensing the infrared rays guided by the waveguide and converting the infrared rays to the electrical signal.

11. The apparatus as claimed in claim 10, wherein the waveguide is made of a material that can reflect infrared rays.

12. The apparatus as claimed in claim 9, wherein the temperature processor comprises:

an amplifier for amplifying the electrical signal received from the temperature measurement module;

a filter for removing noise from the amplified electrical signal; and

an analog-to-digital converter for converting the electrical signal to a digital signal.

13. The apparatus as claimed in claim 9, wherein the output unit is a liquid crystal display apparatus.

14. The apparatus as claimed in claim 9, wherein the output unit is a liquid crystal display apparatus of a mobile communication terminal.

15. The apparatus as claimed in claim 9, further comprising a mobile communication terminal through which the bio information generated from the control unit is wirelessly transmitted to a predetermined medical institution.

16. The apparatus as claimed in claim 9, wherein the output unit is a liquid crystal display apparatus of a compact disc player.

17. The apparatus as claimed in claim 1, wherein the output unit is a liquid crystal display apparatus.

18. The apparatus as claimed in claim 1, wherein the output unit is a liquid crystal display apparatus of a mobile communication terminal.

19. The apparatus as claimed in claim 1, further comprising a mobile communication terminal through which the bio information generated from the control unit is wirelessly transmitted to a predetermined medical institution.

20. The apparatus as claimed in claim 1, wherein the output unit is a liquid crystal display apparatus of a compact disc player.

21. The apparatus as claimed in claim 1, further comprising an earphone connected to the control unit for outputting a sound signal received from the control unit, wherein the control unit further includes a sound processor for controlling the volume of the sound signal.

22. An apparatus for measuring a bio signal, comprising:

a bio signal measurement unit, which is insertable into an ear to be in close contact with an internal surface of the ear, the bio signal measurement unit having a photo plethysmography (PPG) measurement module for radiating light of different wavelengths onto the internal surface of the ear, detecting light transmitted through the ear, and outputting a PPG signal including bio information, and further having a plurality of electrodes for outputting the PPG signal;

an earphone having a speaker for outputting sound and a plurality of electrodes on an outer surface to be connected to the plurality of electrodes of the bio signal measurement unit to receive the PPG signal output from the bio signal measurement unit;

a control unit having a PPG signal processor for receiving the PPG signal through the electrodes of the earphone and generating bio information

using the PPG signal and a sound processor for outputting a sound signal to the earphone; and

an output unit for displaying the bio information generated from the control unit.

23. The apparatus as claimed in claim 22, wherein the PPG measurement module comprises:

a light source unit for radiating light onto the internal surface of the ear; and

a photodetector for detecting light radiated onto the internal surface of the ear and then transmitted through the ear.

24. The apparatus as claimed in claim 23, wherein the light source unit comprises:

a first light source for radiating light of a first wavelength onto the internal surface of the ear; and

a second light source for radiating light of a second wavelength onto the internal surface of the ear, and

wherein the first and second wavelengths are different.

25. The apparatus as claimed in claim 22, wherein the PPG signal processor comprises:

a peak detector for detecting peaks of the PPG signal; and

a signal processor for generating the bio information using values of the peaks.

26. The apparatus as claimed in claim 25, wherein the signal processor comprises a pulse detector for calculating a time interval between the peaks to measure a pulse rate.

27. The apparatus as claimed in claim 25, wherein the signal processor comprises a respiration detector for band-pass filtering the PPG signal to measure a respiration frequency.

28. The apparatus as claimed in claim 25, wherein the signal processor comprises:

a reflection coefficient detector for detecting an AC component and a DC component from each of PPG signals detected at different wavelengths and measuring reflection coefficients; and

an oxygen saturation detector for detecting oxygen saturation in blood using a ratio between the reflection coefficients of the different wavelengths.

29. The apparatus as claimed in claim 25, wherein the PPG signal processor further comprises:

an amplifier for amplifying the PPG signal; and

a filter for removing noise components from the PPG signal amplified by the amplifier and then outputting the PPG signal to the peak detector.

30. The apparatus as claimed in claim 22, wherein the bio signal measurement unit further comprises a temperature measurement module for sensing infrared rays radiated from a body and outputting an electrical signal corresponding to the sensed infrared rays, and wherein the control unit further includes a temperature processor for calculating a body temperature using the electrical signal output from the temperature measurement module.

31. The apparatus as claimed in claim 30, wherein the temperature measurement module comprises:

a waveguide installed near an eardrum for guiding infrared rays radiated from the eardrum; and

a light receiver for sensing the infrared rays guided by the waveguide and converting the infrared rays to the electrical signal.

32. The apparatus as claimed in claim 31, wherein the waveguide is made of a material that can reflect infrared rays.

33. The apparatus as claimed in claim 30, wherein the temperature processor comprises:

an amplifier for amplifying the electrical signal received from the temperature measurement module;

a filter for removing noise from the amplified electrical signal; and

an analog-to-digital converter for converting the electrical signal to a digital signal.

34. The apparatus as claimed in claim 30, wherein the output unit is a liquid crystal display apparatus.

35. The apparatus as claimed in claim 30, wherein the output unit is a liquid crystal display apparatus of a mobile communication terminal.

36. The apparatus as claimed in claim 30, further comprising a mobile communication terminal through which the bio information generated from the control unit is wirelessly transmitted to a predetermined medical institution.

37. The apparatus as claimed in claim 30, wherein the output unit is a liquid crystal display apparatus of a compact disc player.

38. The apparatus as claimed in claim 22, wherein the output unit is a liquid crystal display apparatus.

39. The apparatus as claimed in claim 22, wherein the output unit is a liquid crystal display apparatus of a mobile communication terminal.

40. The apparatus as claimed in claim 22, further comprising a mobile communication terminal through which the bio information generated from the control unit is wirelessly transmitted to a predetermined medical institution.

41. The apparatus as claimed in claim 22, wherein the output unit is a liquid crystal display apparatus of a compact disc player.

42. A method of measuring a bio signal using an ear type bio signal measurement apparatus including a bio signal measurement unit, which is insertable into an ear to measure a bio signal, a control unit for generating bio information using the measured bio signal, and an output unit for outputting the bio information, the method comprising:

(a) receiving infrared rays radiated from an eardrum and measuring a body temperature using the bio signal measurement unit;

(b) radiating light having different wavelengths onto an internal surface of an ear, which is in close contact with the bio signal measurement unit, to measure a photo plethysmography (PPG) signal including bio information and measuring at least one bio signal from among the group consisting of oxygen saturation, a pulse rate, and a respiration frequency, using the PPG signal; and

(c) outputting the at least one bio signal measured in (a) and (b),

wherein (a) and (b) are simultaneously performed.

43. The method as claimed in claim 42, wherein (b) comprises:

(b1) radiating the light having the different wavelengths onto the internal surface of the ear, receiving the light transmitted through the ear, and outputting the PPG signal, using a PPG measurement module included in the bio signal measurement unit having a side thereof in close contact with the internal surface of the ear;

(b2) detecting peaks of the PPG signal; and

(b3) generating bio information using the detected peaks.

44. The method as claimed in claim 43, wherein (b3) comprises:

detecting an AC component and a DC component from each of PPG signals detected at the different wavelengths and measuring reflection coefficients of the different wavelengths; and

calculating oxygen saturation in blood using a ratio between the reflection coefficients of the different wavelengths.

45. The method as claimed in claim 43, wherein (b3) comprises band-pass filtering the PPG signal to detect a respiration frequency.

46. The method as claimed in claim 43, wherein (b2) comprises:

band-pass filtering the PPG signal collected for a predetermined period of time;

detecting an inflection point by differentiating the filtered PPG signal; and

storing the inflection point as a peak when the inflection point has a value exceeding a predetermined threshold value.

47. The method as claimed in claim 43, wherein (b3) comprises measuring a pulse rate using a time interval between peaks of the PPG signal.

48. The method as claimed in claim 42, wherein the output unit is a liquid crystal display apparatus of a mobile communication terminal, and (c) further includes wirelessly transmitting the bio signals measured in (a) and (b) to a predetermined medical institution through the mobile communication terminal.

49. A recording medium having recorded therein a program for executing the method of claim 42 in a computer.